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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,077	07/08/2003	Steven C. Johnson	10017415-1	7949

22879 7590 09/02/2005

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EXAMINER
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NGUYEN, DANG T

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/615,077	JOHNSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dang T. Nguyen	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1, 4 - 29, 32, 34, and 36 - 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4 - 29, 32, 34, and 36 - 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Search history.

**Response to Amendment after Final Rejection**

1. This office action is in response to applicant's amendment filed on 08/11/05.

Claims 2, 3, 30, 31, 33, 35, 43, and 44 have been canceled. Claims 1, 5, 10, 32, 34, 36, and 41 are independent claims. Claims 1, 4 - 29, 32, 34, and 36 - 42 are pending on this application.

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

3. The indicated allowability of claims 1, 4 - 29, 32, 34, and 36 - 42 are withdrawn in view of the newly discovered reference(s) to Kalnitsky et al. (Patent No.: 6,118,691). Rejections based on the newly cited reference(s) follow.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the <sup>UV light window located below memory substrate per claim 41</sup> ~~Fig. 4B~~ must be shown <sup>(e.g. Fig 4B)</sup> or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 5, 6, 9, 10, 11, 15, 18, 21, 24, 32, 34, 36, 37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont U.S. Patent No. 5,212,541, in view of Kalnitsky et al. U.S. Patent No. 6,118,691.**

**Regarding independent claims 1, 5, 10, 32, 34, and 36,** Fig. 6 of Bergemont discloses a system comprising: a high-density non-volatile flash memory (Col. 1 lines 15 – 20) having no erasing circuitry (Col. 1 lines 23 – 25 of Bergemont discloses erasing data in a nonvolatile memory by expose the memory to and ultraviolet light. Therefore no erasing circuitry for the memory is discloses by Bergemont); and an ultraviolet light window adapted (Col. 1 lines 25 – 27 "Transparent Lid") to expose the high-density non-volatile fast memory to UV light (Col. 1 lines 23 – 25). However, Bergemont does not disclose the flash memory having two-terminal drain-gate-connected.

Fig.16 and on Col. 12 line 66 – Col. 13 line 4 of Kalnitsky et al. discloses a memory device (1400) having two-terminal drain-gate-connected (1410).

Bergemont and Kalnitsky et al. are common subject matter for memory device. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the FET transistor memory of Bergemont et al. with the FET transistor taught by Kalnitsky et al. for the purpose of limit the read voltage that is dropped across the memory transistor (Col. 3 lines 1 – 3).

**Regarding dependent claims 6, 9, 18, 21, 37, and 40,** Figs. 5 and 6 of Bergemont as applied to claims 5, 10 and 36 above, further disclose wherein the two-terminal drain-gate-connected modified flash cells are configured as a two-dimension or three-dimension planar matrix of cells.

**Regarding dependent claim 11,** Bergemont as applied to claim 10 above, further discloses wherein the UV light window is located above a control gate of the modified flash cells (Hence the memory is formed by control gate, drain and terminal as disclosed in Fig. 2, and on Col. 1 lines 25 – 27 discloses “transparent Lid” is on the package of the memory. Therefore the “Transparent Lid” must be above on top the control gate of the memory).

**Regarding dependent claim 15,** Bergemont discloses wherein the UV light window is adapted to diffuse UV light entering the UV light window (This is inherent to “Transparent Lid” taught by Bergemont: because diffusing is a intrinsic characteristic of any transparent material which is exposing to the light).

**Regarding dependent claim 24,** Bergemont as applied to claim 10 above,

further discloses an electronic device adapted to house the modified flash cells (Col. 1 line 26 discloses "package EPROM chip" is an portable electronic device for housing multiples flash memory cells), the electronic device having an opening to receive the UV light window (Col. 1 line 25 discloses "UV transparent Lid").

**6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont modified by Kalnitsky et al., in further view of Maayan et al., Pub. No. US 2004/0008541 A1 - Pub. Date: Jan. 15, 2004.**

Bergemont modified by Kalnitsky et al. as applied to claim 1 above disclosed every aspect of applicant's claimed invention except for the two-terminal drain-gate-connected modified flash dell is a diode-connected nitrided read-only memory (NROM) cell.

Fig. 2B of Maayan discloses a flash cell is a NROM cell (page 4, paragraph [0048]).

Bergemont/Kalnitsky et al. and Maayan et al. are common subject matter for memory device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated the Nitrided memory cell taught by Maayan into the memory of Bergemont/Kalnitsky, since Maayan taught the benefit by pointing out that the NROM cell particularly well-known and suitable for multiple use in memory chips (Maayan, Page 3, paragraph (0032) lines 7-8).

**7. Claims 7-8, 16-17, 19-20, 22-23, and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont in view of Kalnitsky, and in further view of Wu, Pub. No. US 2003/0146465 A1 - Pub. Date: Aug. 7, 2003.**

**Regarding dependent claims 7 and 8,** Bergemont/Kalnitsky as applied to claim 6 above, disclosed every aspect of applicant's claimed invention except for the two-dimensional planar matrix of cells is a NAND or a NOR configuration.

Wu discloses a memory structure having a configuration of NAND and NOR type (Page 1, paragraph 0004).

Bergemont/Kalnitsky and Wu are common subject matter for memory device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated NAND or NOR configuration taught by Wu into Bergemont/Kalnitsky's memory for the purpose of using NAND type for having very high parasitic capacitances between the select-gate word line and control-gate line, or using NOR type for obtaining high speed programming (Wu, page 1 paragraph 0004).

**Regarding dependent claims 16 and 17,** the claims incorporated substantially same subject matter as claims 7 and 8 above, and are rejected along the same rationale.

**Regarding dependent claims 19 and 20,** the claims incorporated substantially same subject matter as claims 7 and 8 above, and are rejected along the same rationale.

**Regarding dependent claims 22 and 23**, the claims incorporated substantially same subject matter as claims 7 and 8 above, and are rejected along the same rationale.

**Regarding dependent claims 38 and 39**, the claims incorporated substantially same subject matter as claims 7 and 8 above, and are rejected along the same rationale.

**8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont in view of Kalnitsky, in further view of Zollo et al., Filed: Nov. 25, 1994**

Bergemont/Kalnitsky as applied to claim 10 above, does not explicitly disclose the UV window is located below a substrate of the modified flash cell.

Figs. 2 and 3 of Zollo discloses an ultraviolet light window [304] located through the aperture ([312] or (Fig. 2 [204])) is located below a substrate (106).

Bergemont/Kalnitsky and Zollo et al. are common subject matter of memory device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the UV window of Bergemont located below the substrate as taught by Zollo et al. as a design of interests. Since applicant has not disclosed that the UV window located below a substrate, is used for a particular purposed, or solves a stated problem. One ordinary skill in the art, furthermore, would have expected applicant's invention UV window to perform equally well with the UV window taught by Bergemont or Zollo et al., because all serve the same purpose for as exposing to UV light to erasing/programming the memory.



**9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont in view of Kalnitsky, and in further view of Suzuki, U.S. Patent No. 6,816,198.**

Bergemont/Kalnitsky as applied to claim 10 above, does not explicitly disclose the UV window is interposed between control gates, or is offset from control gates of the flash cells.

Fig. 1 of Suzuki disclosing a disclosed the non-volatile memory array (Col. 9 lines 2 – 10) utilizing ultraviolet window (Fig. 2 [17]) for erasure the memory of the cell (Col. 4 lines 46 – 53); wherein the window 17 is interposed between control gates (19) or offset from the control gate (19) of the EPROM cells (Fig. 1).

Bergemont/Kalnitsky and Suzuki et al. are common subject matter of memory device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the UV window of offset or interposed within the control gates as a design of interests. Since applicant has not disclosed that the UV window interposed between control gates, or offset from the control gates is used for a particular purposed, or solves a stated problem. One ordinary skill in the art, furthermore, would have expected applicant's invention UV window to perform equally well with the UV window taught by Bergemont or Suzuki, because all serve the same purpose for exposing to UV light to erasing/programming the memory.

**10. Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont in view of Kalnitsky, and in further view of Lin, Pub. No. US 2003/0064564 A1 – Pub. Date: Apr. 3, 2003.**

Bergemont/Kalnitsky as applied to claim 24 above, disclosed every aspect of applicant's claimed invention except for wherein the electronic device is a portable electronic device, a cellular telephone, a personal digital assistant (PDA), an MP3 player, and a lap-top computer.

Lin discloses the portable electronic device is a portable electronic device, a cellular telephone, a personal digital assistant (PDA), an MP3 player, and a lap-top computer (Page 1, paragraph [0004] lines 17-23).

Bergemont and Lin are common subject matter for flash memory cell. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated Lin's portable electronic device into Bergemont's flash cell, since Lin taught the benefit by pointing out that portability of these electrical consumer product is strongly prioritized by consumers, the products' size must be minimal (Page 1, paragraph [0004] lines 21-23).

**11. Claim 41 is rejected under 35 U.S.C. 103(a) as being anticipate by Zollo et al. U.S. Patent No. 5,495,450, filed: Feb. 27, 1996.**

Regarding independent claim 41, Figs. 1, 2, and 3 of Zollo et al. discloses a nonvolatile memory (Col. 1 lines 39 - 43); and an ultraviolet light window adapted to

expose the nonvolatile memory to ultraviolet light, wherein the UV light window is located below a substrate of the memory.

Fig. 1 discloses a memory [106] with a plug [110] to plug into the opening [104] to protect an accidentally erased or corrupted from the light of a certain wavelength maybe inserted through.

Fig. 3 discloses an ultraviolet light window [304].

Fig. 2 discloses wherein the UV light window (Fig. 3, [304] locate through the aperture [312] or (Fig. 2 [204])) is located below a substrate (106).

Zollo does not clearly disclose the location of UV light window in Fig. 2. However, Fig. 3 discloses the window [304] locate through the hole (aperture). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Zollo to include the window (Fig. 3 [304]) into (Fig. 2 [204]) for the purpose of preventing the damage from external device get to the memory.

**12. Claim 42 is rejected under 35 U.S.C. 103(a) as being anticipate by Zollo et al. U.S. Patent No. 5,495,450, filed: Feb. 27, 1996 in view of May, US 6,278120 – filed: Apr.28, 1999.**

**Regarding dependent claim 42,** Zollo et al. as applied to claim 41 above disclosed every aspect of applicant's claimed invention except for the UV light window is adapted to diffuse UV light entering the UV window.

May discloses a window further diffuses the light passing through the aperture (Col. 1 lines 66 – 67).

Zollo and May are common subject matter for ultra-violet light. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated May's diffusing UV light into Zollo's window for the purpose of achieving erasing capability of the memory circuit.

### ***Prior art***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tomioka et al.	Patent No.: 5,835,936	Date of Patent: Nov. 10, 1998
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Tedrow et al.	Patent No.: 5,339,272	Date of Patent: Aug. 16, 1994
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### ***Contact Information***

14. Any inquiry concerning this communication from the examiner should be directed to Dang Nguyen, who can be reached by telephone at (571) 272-1955. Normal contact times are M-F, 8:00 AM - 4:30 PM.

Upon an unsuccessful attempt to contact the examiner, the examiner's supervisor, Richard Elms, may be reached at (571) 272-1869.

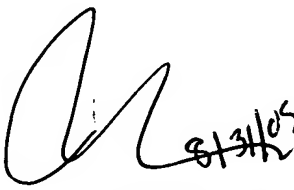
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 305-3900. The faxed phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the Status of an application may be obtained from the

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patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC@uspto.gov](mailto:EBC@uspto.gov).

Dang Nguyen 8/25/2005



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